NOTES ON *MOMPHA NODICOLELLA* FUCHS (LEP.: MOMPHIDAE)

By A. M. Emmet *

This species was placed on the British list on the evidence of three specimens captured by Buxton at Westerham, Kent on the 24th of June, 1915 (Wakely, 1944-45). One of these was presented to the British Museum (Natural History) and was later found to be misidentified *Mompha subbistrigella* (Haworth) ([Cockayne], 1951). The other two are lost and without evidence to the contrary they must be considered to have been likewise *M. subbistrigella*.

The first authentic record was made by the late S. Wakely in 1950. On the 2nd of September he found a number of galls in stems of rosebay willowherb (*Epilobium angustifolium*) at Oxshott, Surrey. One of these was still tenanted and produced an adult on the 5th of October (Wakely, 1951a). During the next few years, Wakely and L. T. Ford found more galls at Oxshott and also on Ockham Common and Mickleham Down; they reared moths from these and also caught adults at Horsley in late April. All these localities are in Surrey. Larvae were found from late May onwards just into September and they concluded that the species had a single brood extending throughout the whole summer (Wakely, 1951b; 1953; 1954; 1957; 1958). Ford (1958) described it as univoltine and Emmet ([1978]) followed his opinion.

The record of this species in an East London churchyard (Plant, 1980) offered a convenient locality for further study and I was also desirous of checking the determination for which I had been responsible, since this had been challenged on the grounds that the situation was improbable. Accordingly, my wife and I visited the churchyard on the 3rd of July, 1981. We had thought from Colin Plant's account that the moth might be common but we certainly had not expected the profusion which we found. There are large stands of rosebay and a high proportion of the stems (possibly as many as one in three) were attacked. Some stems held as many as six galls and we later found that about a quarter of the galls harboured more than one larva. We should have made our visit a week earlier, since most of the larvae had already gone. We gathered 12 stems, holding about 30 galls. Eight larvae emerged from these in the next 24 hours, all of which produced adults from the 18th-20th of July; there were no parasites.

A remarkable feature of the larval feeding is that it appears to have no adverse effect on the plant, which grows to full size and flowers normally however many galls are present. Stem-feeding larvae frequently cause drooping and the closely related *Mompha divisella* Herrich-Schäffer causes branching above the gall (Ford, 1949). The gall of *M. nodicolella* when opened reveals a surprisingly small excavation in relation to the size of the larva. The gall is caused by the plant's replacement of the tissues eaten by the larva and it appears that the plant keeps just ahead by producing more

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new tissue than the larva can eat. Wakely (1951b) recorded the galls mostly on small, low plants which had not flowered; in East London they were on full-sized plants at heights ranging from 1-4 feet from the ground. The stems redden with age and the presence of a gall causes this to happen prematurely at that point, a character which renders it very conspicuous.

When the larva is full-fed, it chews out a neat hole in the side of the gall and emerges through it prior to pupating externally. A number of galls were found in which there was already a hole, but this had been covered with a thin film of silk under which a larva was visible. At first it was supposed that this was to protect the larva during a period of rest between eating out the hole and quitting the gall, but later, after aborted galls had been dissected and some found to contain two dead larvae, it was realised that the seal was made by a second larva for protection until it too was ready to leave. It has been stated above that the excavation is small. The working in galls occupied by two larvae was noticeably larger but even then the protective strategy adopted by the plant seems to work effectively.

Bradley (1951) describes the imago and Meyrick (1928) gives an excellent brief description of the wing pattern, though I do not agree with his statement that the adbomen beneath is whitish towards the apex only. I cannot recognise the species in Mr S. N. A. Jacobs' coloured figure (Wakely, 1944-45, Pl. 5, fig. 5; [Agassiz], 1978, Pl. 12, fig. 5). His drawing was made from a continental specimen and I suspect that it is not the species we have in Britain. I would never accuse Jacobs of inaccurate draughtmanship.

There are gaps in our literature in the account of the life history. The egg is presumably laid on the stem of the foodplant, but I could not find it; possibly it is placed in the axil of a flower or a leaf. One would expect to see traces of a gallery leading inwards to the centre of the stem, but I failed to find this in about 30 dissections; the new tissue which swells the stem possibly envelopes this working. The larva, on leaving the gall, is bright crimson-red, paler between segments; head, divided prothoracic plate and small anal plate brown. The pupa is pale yellowish brown. Ford (1957) describes the cocoon as thick; "thick" is a relative term, but since the pupa is clearly visible within I would regard it as an overstatement. Wakely (1953) says that "the white spun silk cocoon is of a sticky nature and inclined to adhere to one's fingers"; this tallies with my own observations. In captivity the cocoon is spun in tissue; the site in the wild is probably leaf-litter.

Although *M. nodicolella* has always been described as univoltine, the evidence suggested that it has two generations. A second visit to the churchyard with the Revd. D. J. L. Agassiz on the 21st of August gave an opportunity to check this hypothesis.

We observed adults gyrating on tombstones in the manner described by Colin Plant; the purpose seems to be to test the substrate before settling down to roost. David Agassiz also found as many as seven larvae crawling on the tombstones, indicating that they were plentiful. Yet, surprisingly, we found hardly any fresh galls. The few we observed were near the tips of the small branches

which sometimes occur high up amongst the flowers. Then David noticed small holes in the seedpods, and these pods when opened were found to contain larvae corresponding to those of *M. nodicolella.* Apart from the hole, there was no indication that a pod was tenanted. These pod-feeding larvae were present in great profusion.

At first we thought that this different method of feeding indicated a different species, but more mature reflection suggested otherwise. It was improbable that two species of *Mompha* would occur so abundantly in the same urban locality. Moreover the larvae were not eating the seeds but the internal stem to which they were attached; this pabulum probably differs little from the tissues of the main stem. One speaks loosely of the larva making a gall, but it is, of course, the plant which makes it. It probably cannot make one in a seedpod. It can only do so in the stem during the active vegetative period, and the reason why new galls were confined to the slender branches of the flower-head was that it was only in that part of the plant that growth was still taking place. It is even possible that other larvae were feeding unobserved in the stems without any gall being produced, but this is conjecture. What is certain is that in August the preferred situation for feeding is in the pods, for the adults, which began to emerge in mid-September, proved that both the gall- and pod-feeders alike were *M. nodicolella*. It is interesting that the larvae feeding in pods were heavily parasitised, whereas those in galls appeared to be immune.

The entry for species no. 851 in *The Field Guide to the smaller British Lepidoptera* needs to be rewritten as follows:—

O. On *Epilobium angustifolium.*
L. 5-6; 7-8. First generation in the stem, making a gall or swelling, usually in the flowering part of the stem; second generation in a gall high up or, more commonly, in a seedpod where its presence is betrayed by a small hole.
P. 7; 8-9. In a viscous silken cocoon spun amongst detritus on the ground.
I.7-8; 9-5. The generations tend to overlap; the second overwinters.

With regard to distribution, Wakely's Surrey localities have already been mentioned. He also found it in Camberwell, south-east London (Wakely, 1970). He took me to the site which was the derelict garden of a house due for demolition, and I reared six moths from the galls we found. The habitat much resembled that at East Ham. Ford found galls in Broadwater Forest, Sussex and H. J. Burkill said he saw them "once in Yorkshire some years ago" (Wakely, 1951b). This last record is too indeterminate to be accepted. J. M. Chalmers-Hunt (1970) and A. A. Allen (1975) recorded *M. nodicolella* from west Kent. I have further Essex records from Wanstead Park, Grays Chalk Pit, Writtle and Saffron Waldon, and have also found galls at Freckenham, west Suffolk. The species is therefore confirmed in vice-counties 14, 16, 17, 18, 19 and 26. It has probably been taken more widely but I do not think the records have been published. The galls are easy to find and records can be made from them even if they are vacated.

Though local, this species can be abundant where found. About ten flower-heads collected at East Ham on the 21st August produced approximately 46 moths and 20 parasites; the galls taken on the same day yielded only four moths.

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A SECOND MONMOUTHSHIRE RECORD OF ARHOPALUS RUSTICUS L. (COL: CERAMBYCIDAE). – Mr. A. A. Allen's recent note on the southward extension of this longicorn's distribution in Britain (*Ent. Rec.* **93**: 166) prompts me to record the occurrence of a second example of this species on Aug. 27th 1980 at Usk. This insect, as did the one a year previously, came to my garden m.v. trap.

The lengths of these specimens were respectivelv 25 mm. and 22.5 mm. – Dr. G. A. NEIL HORTON, Plas Newydd, Usk, Gwent.